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17

BEANS AND BEAN COUNTERS

Foreword

Keeping the books on Communist theater forces, a task usually referred to as order of battle intelligence but better described as bean counting, has been a long time subject of controversy. It is a task that nobody and everybody wants. No one doing the work hasn't wished he could push it off on someone else because it requires an increasing input of resources at a time when other demands have grown also. At the same time, control of production of the basic data on theater forces, data on which most analysis must rest, is something everyone wants. It's felt to be too important to be trusted to the other fellow.

There are both political and substantive reasons for the dichotomy. The numerology of the theater forces is important in balance of power arguments, force capability studies, interservice rivalry, and budget competition. Because no one is free of bias, conscious or unconscious, no consumer completely trusts data produced by someone else or presentations based on them. But trust aside, no series of numbers ever seems to be quite what everyone can use in analysis. The salami is never sliced quite right. The result is that most analytical shops try to produce series to meet their own needs, and in doing so get into the numbers themselves and finally end up questioning the capabilities and methodologies of other producers.

The duplication of effort which results involves more than just additional sets of analysts. Collectors are confronted with competing and conflicting requirements -- as are the processors. Indeed, the duplication has extended into processing as well as analysis. But most troubled are the consumers whose anguished cries for someone to get the numbers right are seldom satisfied.

This paper examines the order of battle function, who wants data, how they are produced, and proposals for changes in the systems that produce them.

SUMMARY

I. THE WORLD OF BEAN COUNTING

1. The demands for data on the Warsaw Pact theater forces have increased steadily for the past 10 years.

-- forces capability studies have gone far beyond the old ground division, airplane and manpower simplicities.

-- Operations analysis and gaming requires greater detail on all parts of the theater forces.

-- Comparative East-West force tabulations and studies need variations from traditional data breakdowns.

-- MBFR focuses attention on standing forces, especially manpower.

2. Consumers have come to include, in addition to military planners, a large array of politico-military groups including top level policymakers.

-- The Secretary of Defense and the OSD interest in forces data reflected heightened awareness of the relative importance of tactical nuclear and conventional forces for the defense of Europe in the context of strategic nuclear standoff.

-- The Assistant for National Security Affairs and the Secretary of State were brought into the data picture by the necessity to evaluate relative US and Allied contributions to NATO because of:

- Congressional pressure to reduce US forces;

- the need for NATO force improvements, and

- movement toward mutual East-West force reductions.

3. CIA/ORR-OSR came to duplicate in part the data production of DIA and to furnish data directly to consumers.

-- DIA remained wedded to the data and data formats favored by military planners, particularly tactical-logistic offices.

-- CIA, seeking to accommodate the wider range of consumers, questioned not only DIA data but use of evidence from which data were produced and methodologies used to make estimates.

-- US data vs. NATO 161 data became an increasingly important issue in US policy debates with NATO countries, aggravating internal US differences.

-- MBFR forced previously unattained cooperation and coordination between CIA and DIA while generating a new set of NATO data outside the MC-161 context.

-- Basic differences between CIA and DIA in outlook, methods, response and attitudes toward innovation survive and will outlast MBFR.

4. Suggestions to relieve the burden of data production include decentralization of part of the work to field and centralization of the work in Washington in one agency.

-- Decentralization runs counter to all the forces contained to current collection, processing, analysis and estimating processes.

- Collection tasking is concentrated in Washington where constant interplay between collectors and analysts is required if collectors are to be kept aimed at key objectives.

- Processors at NPIC and NSA are progressing toward channeling production into machine systems permitting analysis components to tap directly into basic data banks.

- Analysis rapidly responsive to needs of high level consumers relies on dialogues with consumers and on development of appropriate data accumulations and displays.

- Estimates are focusing on current policy problems, and both data and analysis must be supportive in both scope and depth.

-- Complete centralization would deprive either the DCI or the DOD of direct data support -- an unthinkable situation.

- It would also remove valuable competition in analysis.

- It would deprive consumers of alternate views and enlarged perspective.

II. RECOMMENDATIONS

5. Even though radical structural change is not an answer, new approaches to the production of forces data, or bean counting, are required if tight resources are to be used efficiently and if the products of new collection systems are not to be wasted.

-- The lack of unified, integrated concepts for collecting, processing, analyzing and estimating is wasting resources, causing the wrong kind of duplication, and opening dangerous gaps.

-- The NIO function and the KIQ operation offer the potential for getting the needed supra-agency guidance and direction if allowed to carry through into affecting agency operations.

6. Collection of information on the Warsaw Pact theater forces needs a collection strategy which takes into account the strengths and weaknesses of the various collectors.

-- The current methods of tasking collectors don't cut across collection systems either in the minds of the analysts' writing requirements or in the groups drawing up collection plans for the individual systems.

-- Flexibility in tasking is needed to accommodate changes in the capabilities of one system by re-deploying or reorienting other systems.

7. Processing's interpretive function should be broadened so that each of the major processors of technically-collected information produces a data base for community use derived from information yielded by his source.

-- This recommendation runs counter to past efforts to restrict the processors to disseminating raw information.

-- The analytical shops do not have the manpower nor the expertise to continue to do interpretation and would be overwhelmed by the output of the [redacted] 25X1

-- The information yielded by each of the major technical systems, SIGINT, satellite photography and [redacted] 25X1 photography has unique features which would make the single source data bases complementary.

8. Analysis is strengthened by competition and contention and provides the stuff of better estimates when encouraged into independent innovation and exploration.

-- Duplication, per se, has become a target for those aiming to increase efficiency.

-- In analysis, however, competition offers consumers balance and perspective unavailable in products from a single source.

-- The development of a strong common view of the physical dimensions of a theater force as well as its capabilities requires independent analysis and judgment.

-- Complementary analytical teams have developed complementary data storage and retrieval systems which are providing the foundation for a "national" data base.

9. Estimating is embracing a wide variety of "national" products because of NSSMs and MBFR.

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-- The estimating system which now taps analysts as well as NIOs is providing timely support for MBFR negotiations.

-- The variety of products and the current ad hoc dissemination of them, however, needs monitoring by a guiding authority to see that a "national" position is identifiable, and is the result of a fair and balanced coordinating system, and that dissemination is proper.

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DISCUSSION

I. THE WORLD OF BEAN COUNTING

A. What are the Beans?

There has been a considerable evolution in the quantity and types of data required of the bean counters. Twenty years ago interest in data on theater ground and air forces on the part of higher levels of government did not extend much beyond numbers of ground divisions, numbers of airplanes, and gross numbers of men. General requirements for data most often could be satisfied by recourse to tables in the National Intelligence Survey, and the accompanying text was taken as the word on other military resources and on capabilities. The ground and air sections were written by the intelligence components of the army and air force, neither of whom felt any great pressure from critics. The result was ritualized, stagnated methodologies, the details of which were known to few outside order of battle shops. Changes occurred infrequently. New evidence was allowed a considerable period of aging before acceptance. Such arguments over evidence as there were occurred principally between ACSI, Army, and USAREUR, but neither felt required to coordinate final judgments with the other.

The initiation of the 11-4 series of National Intelligence Estimates in the mid-1950s began the evolution toward more comprehensive military estimating and began a continuing agony for the military intelligence components. Not only did members of the Board of National Estimates ask difficult questions about how specific estimates were arrived at, but CIA began delving into military detail through its work on military expenditures. And as luck would have it, the Khrushchev era began in the USSR, resulting in a rapid series of changes in the Soviet military posture. The military estimating apparatus did not adapt easily to the new situation. The general reaction was to fall back into defensive positions rather than to advance to meet the challenges through reexamination of methodologies and production of new forms of intelligence. Pressures to improve estimates and from new developments were evaded to the maximum extent possible despite the evident inadequacies of the existing set of data on the Warsaw Pact theater forces.

A good example of how the system reacted was the refusal to accept evidence that the Soviets were reducing military manpower during the years 1954-1959. The Soviets announced cuts of over two million men during this period, and good evidence was available to show that considerable cuts were in fact being made. US estimates of Soviet military manpower actually speculated that there might be increases at one point during this period. The main problem was that US estimates had failed to follow the increases that the Soviets had made during the Korean war, so that if the announced cuts or something approximating them were accepted, the US estimates would have been obviously too low. So the military estimators kept the level of 4.2 million men carried since 1948. The mounting evidence that reductions were being made became increasingly embarassing so that by the mid-1960s most military shops were ready to accept Khrushchev's figure of 3.6 million for January 1, 1960. Even then, however, each of the US services insisted the cuts had been made not in its Soviet counterpart but in one of the other services.

In 1963, Defense Secretary McNamara's impatience with unresponsive estimating resulted in setting up a combined CIA-DIA task force to reexamine the evidence on the number of Soviet divisions and other field units and on the production and inventories of ground force equipment. The study exposed the inflexibilities of the estimating process. A good share of the problem lay with the "experts". An expert was responsible for data on some small substantive area and he alone made the estimate for that area. Aggregations were the summation of a number of detailed estimates by these experts. Challenging an aggregate was difficult because that was the way the pieces added up even though the summation might appear curious or even absurd. In fact, the experts were often people newly assigned to intelligence or were old hands wedded to some long standing methodology or particular type of evidence. For example, analysis of Soviet field post numbers played a key role in OB work long after it was clear that the analysis was only marginally useful in formulating an OB. Another example was the curious reluctance or outright resistance to the acceptance of satellite photography as grade A evidence. Although early photography lacked detail, its usefulness seemed obvious to all but some of the OB analysts. Nonetheless, because of managerial decisions first by ACSI (Army) and then by DIA its predecessor in the OB business, there was no process for getting overhead photography into OB shops.

The introduction of systems analysis into military analysis also helped stimulate the era of sophisticated intelligence assessment of the Pact theater forces. The systems analysts brought into OSD proved to be no respectors of experts. In addition to promoting new methodologies, they dug into the evidence and analysis behind published data if the data didn't look right. While the systems analysts also had some preconceptions of what the analysis should show, their probings stimulated better developed estimates as well as fostering long overdue consistency between estimates. The new approaches demonstrated the value of arms-length, broad scale analysis along with the dangers of not being able to see the army for the tanks on the part of narrowly focused experts. The successors to McNamara's systems analysts have continued the valuable role of critics as they have moved into various gaming techniques. The games require lots of data and whether the games themselves have been able to prove anything, the process spotlights soft spots remaining in theater force estimating, while keeping analysis probing far beyond the ground division-aircraft superficies.

Other developments also have fostered breadth and depth of analysis on theater forces. Two longer term factors are the advances in weapon development and the front line role of the East Europeans. The more recent, and most demanding, is the work required to support MBFR analysis.

Weapons development since the early 1960s have given increased importance to non-divisional elements because much of the advancement has been in weapons not carried in divisions. Surface-to-surface and surface-to-air missiles are the best examples, but antitank missiles and rapid-firing mobile artillery pieces using improved munitions are also of increasing importance. The latest arrival is the antitank helicopters. The new weaponry has not only prompted interest in combat support units but also in logistic units because of the high dependence of the new weapons systems on fast resupply and maintenance. The overall increase in mechanization and mobility has had the same effect for general transport and POL handling units.

The East Europeans have had an independent front line role since 1964 when a reorganization of Warsaw Pact front assignments gave the Poles responsibility for the northern front and the Czechs

the southern front. At the same time, the East Germans appeared in exercises arrayed in wholly East German field armies in the central front area. Since that time the East Europeans have acquired an array of weaponry similar to the Soviets giving them an increasing potential for engaging in mobile ground warfare and in aerial combat.

It has been MBFR, however, that has forced a quantum jump in the depth of analysis and a new emphasis on the peacetime Warsaw Pact forces. Earlier analysis was concentrated on the forces which were expected to comprise the wartime threat with the peacetime force of interest primarily in its role as a mobilization base. Thus, until MBFR, detailed data on the standing force as such were of only passing interest and were easy to neglect. Curiously, the Soviet's forces in Eastern Europe were not far behind the peacetime East European forces in the race for being the most neglected. Soviet forces in Eastern Europe were ascribed an estimated wartime strength with comparatively little specific attention given them. Although it might have been expected that USAREUR and USAFE could be relied upon for details, that proved to be misplaced confidence. Neither US nor Allied military intelligence in Europe could make useful contributions to MBFR analysis because of their preoccupation with threat-oriented, and thus worst case analysis.

MBFR caused a further upheaval. Manpower estimating has always been secondary to counts of weapons and units, and that effort placed on assessing manpower was concentrated on estimating wartime strengths as a part of the wartime threat analysis. CIA has always had a very difficult time getting decent estimates of peacetime manpower for costing purposes and knew well the dangers of relying too heavily on any of the available detail. The fact is that few of the peacetime manning factors available were backed up by any decent evidence. When MBFR analysis was getting underway in 1970-1971, intelligence continually cautioned NSC staffers, ACDA, and ISA about developing reduction options which involved manpower unless manpower was linked to units. A focus on manpower per se was inevitable, however, because men are the one common denominator all can agree upon. The result has been a continuing trauma for both intelligence analysts and MBFR officials. The latter have refused to believe that a lack of information rather than neglect and ineptitude continue to be responsible for the situation. Earlier cautions about wide margins of error have been forgotten. A crash effort to shape up the manpower estimates has

absorbed a very large share of the theater force analysis time in both CIA and DIA for the past two years and NSA has begun to exploit some relevant intercept capabilities. Pressure will continue, however, as negotiations progress toward the specifics of reductions.

Conclusion or cancellation of MBFR negotiations will not, however, relieve the pressure for better and more comprehensive data on the theater forces. Efforts to develop useful comparative measures of theater force capabilities, largely unsuccessful so far, will go on and will represent a continuing requirement for better data. Other consumers, increasingly aware of the complexities of modern theater forces will not be satisfied with data sets restricted to a few types of front line units or items of equipment.

B. Who Wants to Know?

There has been a constant increase in the demand for intelligence on the Warsaw Pact theater forces in the past 15 years. The change began with McNamara's discovery of how much of his budget went for conventional forces and with the growing realization that strategic nuclear standoff didn't necessarily preclude war in Europe. Prior to that time, intelligence on theater forces was of interest to few outside of a small circle of military planners. And there was little in the requests for intelligence from the military planners to foster innovations in analysis. Indeed, changes were not accepted readily. All is different now with the analysts under constant pressure to develop new ways of measuring and comparing theater force capabilities. And the pressure comes from the highest civilian as well as military levels.

Although McNamara failed in his initial efforts to get the other members of NATO to acknowledge that strong theater forces were a worthwhile investment, he finally won the day when NATO was persuaded to adopt the strategy of flexible response in 1967. Actually the Europeans had long doubted that a conventional conflict with the USSR in Europe would trigger an automatic US strategic nuclear strike on the USSR. To admit such doubts publicly, however, would have reopened questions about unilateral strengthening of European conventional forces. By agreeing to flexible response, the Europeans got a commitment from the US to increase both its conventional and tactical nuclear forces in Europe in return for greater European contributions. The new situation created a greatly increased demand for intelligence on the conventional and tactical nuclear forces of the Warsaw Pact.

NATO intelligence on the Warsaw Pact is codified in the MC-161 document series intended as guidance for planning by SACEUR. Despite the ostensible purpose of the document, it has evolved to be essentially political in nature and has assumed a character which best suits the needs of the European allies for a source of inputs to their internal political military budget processes. While there is good reason to record the presence and nature of the threat posed by the Warsaw Pact for these purposes, as happens in such exercises, an inflationary factor works over time. To make matters more complicated, each member desires to see the threat against himself described in the largest possible terms. Thus, through the 1950s and into the 1960s the series documented the Europeans' contention that the overwhelming capabilities of the Soviet theater forces made efforts on the part of NATO to build a theater counterforce hopeless and a waste of resources. Although the threat described by the 161 series in the 1950s was not out of line, there was difficulty in acknowledging changes in the Soviet force posture and strategy which took place in the late 1950s and early 1960s.

The US reanalysis of Soviet capabilities which started in 1963 had little impact on the 161 series. The basic reason for this was the political nature of the document, but the US did not make a sustained effort to introduce judgments reflecting new evidence and reanalysis. MC-161 is not used by the US in its national planning and the content has had little direct impact here. Essentially, it was more politic to let the Europeans have their threat while the US used its own judgments in making its estimates.

When it became important to the US to bring NATO's view of the threat more into line with the current evidence, there was resistance. The Europeans were determined to have little to do with an exercise they saw as being essentially self-serving to the US. Missionary work done in Europe by Alain Enthoven and others was counterproductive, with the US accused of cooking the books to support its campaign to get the Europeans to spend more on conventional forces. There has been progress since that time, but it has been painful and distressingly slow.

The basic problem remains the political nature of MC-161, and the US hesitance to make an issue of change. Some of those who have led the US delegations have worked to introduce more reality into MC-161 but not only have they not had strong back-up from

Washington, they have not had good teams in the working sessions. US representatives in the working groups have all been from DIA because the drafting of a military committee document is almost entirely a JCS show. Even those in sympathy with the changes made in US estimates have been a poor match in maneuvering against the Europeans because of political naivete and a lack of substantive background. Regardless of the path the US chooses to follow in the future, it should take steps to select working members who understand the relative importance of contentious issues, have depth in substance, and can handle debates with the Europeans.

Having to approve as accurate a set of data as possible for MBFR may be bringing the Europeans around on the MC-161 issue, at least on the numbers. Data introduced for MBFR are being debated on their merits in Brussels and relayed on to Vienna. For the most part these data are as the US would have them, reflecting all-source evidence available to the US. With approval having been given to the MBFR numbers, it might be hard for any national representatives to support different data for MC-161.

A related problem which won't be taken up here but underlies some of the differences between the US and the continental NATO allies in both MC-161 and in MBFR is the sharing of evidence. As analyses of Warsaw Pact forces become more critical to national decision making within NATO, the pressure on the US to prove its case by sharing the output and/or evidence derived from its technical collection will increase. [redacted] 25X1 25X1

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When action is decided on, it should be controlled and operated from the national level. If it should be kept within strictly military channels problems similar to those encountered in MC-161 over the years will surely arise. In other words, the US must have a national representation which can accommodate both the military and political ramifications of such an operation.

Advances in innovative national analysis and gaming have taken place in Europe as well as the US. Both the UK and FRG have theater forces models used in gaming and analysis. This type

of work is an insatiable consumer of intelligence data. If not restrained it could choke out most other intelligence analysis, but it does have the virtue of stimulating more balanced, and thorough, examinations of theater force capabilities. It also offers perhaps the only way to real comparative analyses. There is a need for intelligence to play a more direct role in such work, not only to ensure that numbers are properly used, but also to offer ideas. The project OSR has had underway for the past two years on air and air defense systems is a good example of how these problems can be approached by an intelligence organization. It is also an example of how much analyst time is absorbed by such projects, none of which have proved cheap.

MBFR options analyses and negotiations top the priority list in requirements for extensive detail on the ground and tactical air forces. In this case the counts of beans are needed for themselves rather than as inputs to further analyses. The inability of intelligence to supply requested counts of men, units and equipment within narrow ranges of uncertainty has made MBFR planners and negotiators severe critics of the capabilities of the intelligence community. Although some of the criticism has been the result of (possibly) willful ignorance of intelligence collection, processing and analysis, it has stimulated intelligence producers to the best estimates they have ever made. There is a danger, however, that under the MBFR goad, analysts can be driven to refine estimates well beyond the level of detail warranted by the available evidence. The pressure to drive for detail also means that each new piece of evidence requires a re-tweaking of the estimate. This results in further cries from the MBFR consumer that intelligence doesn't know what it is doing and is unable to get even a simple count right. As it happens, most of what the MBFR people want hasn't yet had a direct effect on negotiations so that the margins of error which so distress them have been unimportant. There is a payoff for intelligence, however, because when the details of an agreement are negotiated, intelligence will have been driven into a position where it probably can support the requirements. It could not have done so from the data base in hand before MBFR negotiations started.

As noted at the beginning of this section the demands for data on the Warsaw Pact have increased remarkably. A common characteristic of much of the new demand both in the US and abroad is that the data are for use in comparisons with US or NATO

forces, from simple tabular comparisons to complex, dynamic gaming. Because of a lack of commonality between force components, deriving useable definitions for purposes of comparison has put a new burden on analysts. Their knowledge not only of the numbers and composition of force elements but of how they are used has increased in importance. And because comparison is the object, new knowledge about US and NATO forces must be acquired.

C. Who Counts the Beans Now?

The bulk of bean counting for publication as such -- orders of battle, tables of organization and equipment, equipment inventories, and logistic guides and tables -- is done by DIA. The workload is formidable, resulting from a set of requirements which seemingly are subject only to addition, not subtraction. DIA's consumers for these products are primarily military and include military components all over the world. Some of the latter also publish local orders of battle, usually based on the DIA publications, but sometimes they introduce analysis of their own in the form of supporting detail.

Other bean counts are issued by DIA in answer to specific requirements such as contributions to NIEs, MBFR analysis, OSD/SA (ODDPA&E) studies and as parts of studies of some aspect of Warsaw Pact capabilities. CIA/OSR also issues bean counts for these purposes and it is here that conflict often arises. Other organizations like NSA or NPIC disseminating counts are recognized to be single source organizations and while differences of opinion and argument result, the clash is different than between the producers of all-source finished intelligence.

Initial substantive differences between CIA and DIA probably are unavoidable. DIA's contributions to meet specific national requirements, not surprisingly, are usually kept consistent with their most recent published listings. OSR's contributions on the other hand usually have been made for the immediate purpose, and OSR does not pay much heed to previous listings if new evidence is in hand or a new methodology has resulted in new figures. Institutionally, DIA must observe continuing commitments to military planners while OSR is free to make those changes it feels are justified to give the consumer the benefit of the latest information and analysis and for his specific need and purpose.

Substantive differences growing out of varying interpretations of evidence are, for the most part, reconcilable. Dissemination of information by collectors is now universal and complete so that only minor irritations of timing of receipt remain. Thus both agencies are working from the same raw material and when compelled by circumstances to coordinate output, most substantive differences can be reconciled or can be subsumed even though different forms of interpretation have been used. The considerable time required to do this, however, could be reduced if common data bases were at hand per the recommendations made below.

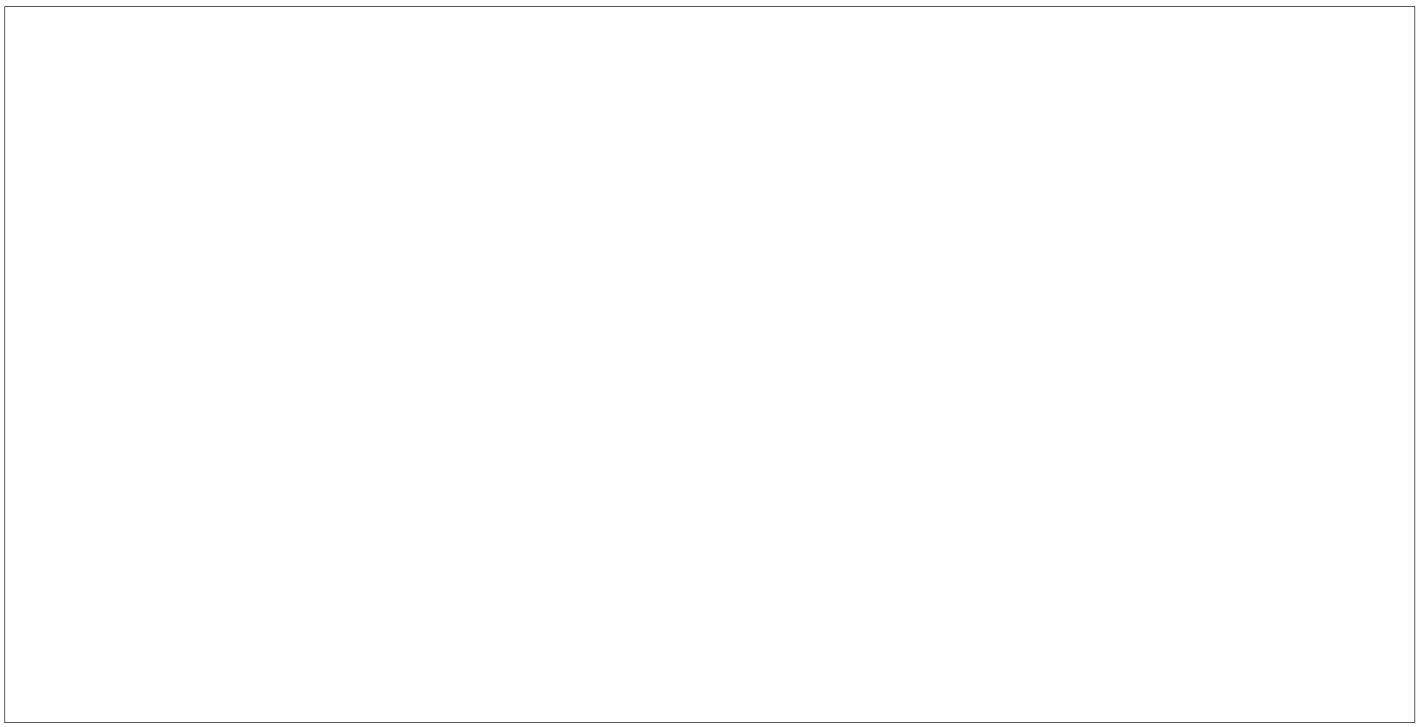
Other differences in counting relate to definitional variations or to the results of application of different analytic methodologies. These are not so easily eliminated and constitute the basis for some long standing conflicts. The fact that DIA is under military control and uses mostly military personnel and OSR is under civilian control with mostly civilian analysts only partly explains the situation. As noted above, institutional responsibilities are quite different. There are also, however, significant differences in size, in access to support such as reference and computer services, and in management philosophy. As now organized, DIA could not do what OSR does but neither could OSR do DIA's job. Thus, more than 10 years of coexistence.

DIA has made substantial progress in the past few years. It has been able to acquire better officers motivated toward intelligence assignments. It turns out better basic data and has shown more flexibility in its approaches to analysis. Compared to OSR, however, DIA's response time remains slow, and its ability to work out approaches to new problems is limited. DIA remains best organized and substantively prepared to meet military-type requirements for finished intelligence. Requests, particularly from civilian policy makers, which depart from the customary, stylized needs of military planners are much harder for the DIA system to meet satisfactorily. Frank statements to this effect by consumers of DIA's products continue to this day.

There are some good reasons for DIA's continuing problems. It has too many masters with OSD, the joint chiefs, the services and the major field commanders all able to crowd its docket with projects. It is hobbled by a severe briefing load which absorbs the time of many of its best people. The burden of publishing OBs, TOEs, guides, manuals and handbooks continues. And perhaps, most importantly, its personnel system is still saddled with many officers in important and supervisory positions doing their first

tours in intelligence. Given the situation it is not surprising that DIA responses so frequently have an "off the shelf" feel to them. If DIA were to be the sole producer of basic data for the Warsaw Pact theater forces, Washington consumers would have to become accustomed to more scissors-and-paste estimating.

Although OSR-DIA relationships had both smooth and rough patches over the years, relationships stayed basically distant and antagonistic until MBFR negotiations got under way in Vienna. A considerable mess occurred during the first negotiating session with OSR, DIA and the DOD MBFR Task Force all supplying the delegation with data, much of it conflicting. The agonies of this experience force formation of an ad hoc coordinating arrangement which has resulted in unparalleled cooperation between OSR and DIA in data work. The agreed data now in hand were generated in a fraction of the time which would have been required through the usual coordinating routines. It is doubtful, however, that the arrangement would survive if MBFR pressure were relieved. The bureaucratic, professional and personal differences are great. A recommendation on how to institutionalize cooperation and coordination on data work under the aegis of the NIO is made below.



D. How are the Beans Counted?

Bean counting is, with rare exception, an arduous, unending process of fitting together many bits and pieces of all-source information. The keys to good counts are continuity and comprehensiveness in filing systems and the analysts' understanding of the behavior patterns of the forces with which he is dealing as well as an understanding of the strengths and weaknesses of the sources he has at his disposal. Most analysts find the work boring as a steady diet and unrewarding because their small triumphs seldom evoke high level interest. Changes are as apt to bring criticism as praise because changes upset consumers' calculations. There is a general reaction that the analyst has discovered something he should have already known and accounted for. Consumers rarely appreciate that despite the fact that military beans are finite and quantifiable a large measure of judgment is required in evaluating and appraising the inflow of information. A lot of incomplete or misleading information comes across every analyst's desk.

Because of the nature of the function there are all too many plodding, unimaginative analysts who are happy at the work aided and abetted by good analysts who are all too frequently rotated through the bean counting positions. The latter have seldom been around long enough to acquire the necessary understanding of the data and forces to do a satisfactory job. Fortunately computer storage and retrieval systems can now go a long way toward supplying a good analyst with the history and force behavior patterns he needs, as well as making source comparison easier and more thorough. This offers management the alternative of giving good analysts bean counting responsibilities in addition to other more stimulating tasks.

High resolution overhead photography has become the basic input during the past 6-7 years in most bean counting functions. It has made the counts better, but not cheaper or easier. The quantity of photography that has to be collected, processed and analyzed to do a thorough job on a part of the theater forces is staggering. The situation would be hopeless without computer support, but even so analysts are being overwhelmed by the task. New collection systems will make the load even heavier while reducing the time available for analysis. Faster and more flexible common computer support systems fed by an organized interpretation function seems to be the only manageable way out of the bind. A specific recommendation on how to do this is made below.

As obvious as the merits of photography for bean counting are, establishing photography as the information base was incredibly difficult. Post World War II bean counting was based on a combination of SIGINT and defector derived information. Despite the fact that the flow of defectors had nearly dried up and SIGINT was reduced to almost complete reliance on traffic analysis by the late 1950s, OB and TOE analysts clung to the old systems of counting. OB and TOE analysts are a conservative lot, but a real problem is that the use of photography for such work is a complex business requiring innovative approaches. It is not simply looking at photographs. The trick is the development of systems for collecting and synthesizing the various types of information which can be derived from imagery in ways which will meet the requirements of OB and TOE analysis. The established OB-TOE community had to be driven into acceptance of methodologies based on photography, and it still is slow to accept innovations to the original methodology.

A recent case in point is the difficulty in getting a change accepted in the way NPIC does its second phase readout [redacted] 25X1 supplement. The old method of readout not only took too long and yielded mostly useless information, but the product could not be fit into computer storage and retrieval systems useful for TOE-OB analysis. It was the only second-phase program to remain in such shape. It took two years to get the change accepted administratively although those opposing it could not show how they used the information in the old format. The change is still not fully operational because of a lack of support in some key elements of DIA. The real sticking point has been that many competent analysts wanted to have NPIC PIs indicate what kind of a unit they thought they were looking at but some DIA analysts believed this was opening the door to usurpation of the basic OB function by NPIC, a risk felt to be overdrawn. NPIC not only lacks the time to do the whole job, but no single source is adequate, as the PIs well understand.

Photography has no equal for the location, and identification of units, the identification and counting of equipment, and the assessment of activity levels, but it cannot tie units together into an organizational system, confidently track relocations, give

warning of movement or exercises, or yield adequate counts of men. SIGINT remains the best day-to-day source of information on all of these except the counting of men. NSA can do an adequate job of exploiting the SIGINT take, although the form and content of NSA disseminations remains a problem. Another problem is preserving enough NSA assets for the theater force area both to intercept the interceptable and to analyze the take. Constant pressure and reassurement have to be applied to preserve theater force priorities. [redacted] 25X1 25X1

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There are few theater force problems which cannot be aided by good covert collection, and it is the only hope for making authoritative counts of men. Fortunately covert collection has never been better from the theater force point of view, but good reports on manpower strengths are still rare. [redacted]

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Overt human sources, the Allied military missions in East Germany, and the attaches in other countries provide some interesting corroborative detail, but for the most part remain at the bottom of the collection resource scale. Their yield should be greater than it has been. They have been working against an archaic set of reporting requirements -- requirements written generally without regard for the capabilities of other, particularly technical, collection systems. DIA has a project underway to develop new requirements but progress is slow. Recommendations for an integrated collection strategy which will take into direct account the varying capabilities of the various collectors are made below.

In summary, bean counting remains largely an item-by-item count based on information which rarely allows confidence that all beans existing have been seen and accounted for. For the most part, there is certainty that all have not been seen. So, depending on the item, every estimated number carries some amount of extrapolation to account for the items analysts believe exist but have not actually got evidence on. It is this slop at the end in which judgment plays the largest role and which generally causes the most trouble with exacting consumers like the MBFR negotiators.

E. Who Should Count the Beans?

The thoroughly military nature of the work, the duplication of effort, and the increasing drain on resources represented by bean counting have given rise to proposals either to decentralize the work or to rationalize efforts at the center. It seems unarguable that the present system which is the result of a series of disconnected responses to developments over time cannot be improved upon. Flaws and inefficiencies are easy to point out, and disgruntled consumers are not hard to find. Before tinkering, however, architects of a new system should not only remember that the old system works, contains useful checks and balances, and has learned a good deal of late about how to serve high level consumers. There are also some physical and bureaucratic realities which have to be taken into account.

If there were decentralization, it would be a short time before duplication would reoccur with Washington agencies finding that they could not do the analysis required of them without the ability to directly control the production and formulation of the basic data they need. They would feel the same forces that originally put ORR-OSR into bean counting. Competence and bias aside, it is a truism that no numerical series in hand ever quite fits the next task. Realignment and reinterpretation are always needed, but they cannot be done without complete knowledge of the evidence behind the basic figures and the definitions used to aggregate them.

There are other strong reasons for not decentralizing. The success which analytical shops have in getting the kind of collection, processing and support they need is in direct proportion to their proximity to the collectors, processors, and reference and computer people. These elements are of course all located in Washington and fast, sympathetic response from them depends on continuing personal contact. It is most critical in the case of the collection and processing of satellite photography where everything is geared to mission schedules. Quick contact will be even more critical with the new systems. Any of the analysts who were involved in the crash effort for MBFR to shape up the estimates on the Pact forces in the forward area will testify to the responsiveness of both the collectors and processors when the problem was explained to them and to the cooperation given in working out and monitoring the effectiveness of the effort. The monitoring of progress was the key to the all-important follow-through to cover hard-to-get areas.

Separation from the other elements in the chain would strike most analysts as unthinkable. Forces analysis, including bean counting, is a vertical process involving continuing interplay with collectors, processors, and consumers. Disconnection of any one of these would reduce responsiveness, encourage errors of interpretation and lengthen the time required to do a project. It would also preclude the use of links between machine systems, a step back into the dark ages of ledgers, file cards and calculators.

There are two excellent examples of what happens when processing and analysis for forces in specified geographical areas is separated from that done for other areas. The problems encountered would be likely to occur if the separation were made on other bases than geography because geography as such was not a problem -- in either example.

25X1 Two large scale projects involving CIA, DIA [redacted] 25X1 were set up to share the establishment of new common data bases on ground forces -- one on the USSR and the other on China. All parties entered the project with the highest resolve to achieve consistency in their products, shared confidence in their judgments and common rates of progress. The projects had the backing of senior officials of each participating organization. Preliminary meetings were held to ensure consistency in criteria, standards of evaluation, and commonality in reporting. The military districts of the USSR and the military regions of China were divided up between the participants wherever possible to take advantage of any unique capability or special interest. The studies were to be all-source but would be based on satellite photography [redacted] which undertook to ensure that the collection requirements of all were looked after. The project on China had the further advantage of experience gained in establishing the project on the USSR. Annual conferences were held to review performances. In sum, it would be hard to visualize projects undertaken under more favorable circumstances. 25X1

Although much useful work was accomplished, both projects failed to achieve their principal objectives: acceptable inputs to common data bases. The bulk of the work has been redone or remains to be redone. Despite the measures taken to guard against diverse criteria, reporting, etc., each participant in fact sailed a different course which in the end made his reports unuseable by

the others without reworking. The absence of a single controlling authority and of continued contact, and the presence of different biases and analytical interests caused reports to be written which not only were not interchangeable but were not trusted by those who did not write them. Few schedules were met, often because local priorities got in the way. Sadly, differences between CIA and DIA reports caused nearly as much difficulty as between US 25X1 [redacted] products. The lesson is that the benefits of division of effort cannot make up for the loss of control and common perspective in work so complex and so dependent on human performance.

The most important factors driving the bean counting process today all militate toward greater centralization, not dispersion. A shift of the work, or any significant part of it to organizations outside the Washington area, would result in less relevant collection, less responsive processing, a loss of control over analytical methods, and a diminished capability to accommodate the policy-making consumers.

Complete centralization, unifying analytical responsibilities in one organization, not only would deprive either the DCI or the DOD of immediate support on theater force questions -- an unthinkable situation -- but also would involve losses in two substantive respects, losses so significant that they alone provide reason enough for not centralizing. One loss would be in competition. The benefits derived from having competing organizations are hard to overstate. Competition between the agencies brings an outside challenge to each -- a challenge from another group which also has access to the information but has a different routine of analysis and a different outlook. Neither can afford to be asleep or to be indifferent as long as such a challenge exists. As in the production of economic goods and services, the routine prime mover in product improvement, willingness to serve and devotion to duty in intelligence is competition, both personal and organizational. Competition, even if it is no more than bouncing ideas off one another in meetings in conferences, stimulates action. Obviously, competition can get out of hand and it has in the past in dealings between ORR-OSR and DIA. It has led to thievery, deceit and double-dealing. Both organizations have matured, however, and the confrontation of problems larger than both of them such as MBFR has encouraged cooperation which probably would have been unattainable in earlier times.

The other loss which would come from centralization would be the absence of the checks and balances provided by the participation of organizations with offsetting biases. Several references to military bias have been made earlier. OSR has its bias too, principally impatience with certain military realities which OSR considers illogical. Whether one set of biases is equal in weight to the weight of the other is less important than the fact that a counterweight exists. The availability to the consumer of more than one view provides him with perspective otherwise unobtainable. Redundancy in analysis is worth the price.

II. RECOMMENDATIONS

The foregoing discussion has focused primarily on problems related to the analytical function in the production of forces data. Confusion, duplication, and partisanship are most apparent in analysis, and it is the target for most suggestions on how to improve production of data. As was pointed out earlier, however, the production of data is a vertical system closely linking collection, processing, analysis, and estimating (Chart 1). Those intimately acquainted with the system know that there are problems throughout and that some of the blame aimed at analysis had better be put on the system itself or another part of the system. Recommended actions, therefore, cover both the system as a whole and each of the major functions.

A. The System

As industrial manager familiar with the operations of a vertically integrated industry would find incomprehensible the fact that there has been no overall directing and coordinating authority for the major substantive intelligence activities. He would view the system of independent operators in the production of forces data as an invitation to waste and inefficiency at best and as risk for bankruptcy at worst. And he would be right.

This history of the production of forces data by the intelligence community is analogous to that of a family cottage industry that grew into a multimillion dollar concern but kept the old intuitive management concepts. It would make an excellent case study for a business management course. The collectors have worked against requirements not formally intercoordinated between collection systems and in many cases are unconscious of the intelligence problems driving the analysts and estimators. The processors are for the most part captives of developments in the processing systems as such and remain independent or semi-independent, jealous of their mystiques and of each other. The analytical

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CHART 1

The Production System for Forces Data

Estimating

NIO for NIEs etc.

OSR-DIA for NSSMs-MBFR

Analysis

OSR

DIA

Processing

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Collection

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25X1

shops are on the one hand too hidebound, and on the other over eager to chase interesting, but possible irrelevant, avenues of analysis. The estimators responsible for NIEs haven't been sure how to satisfy consumers while analytical shops have ground out a stream of bucket-shop estimates for NSSMs and MBFR.

The NIO function and the KIQ operation offer the potential for getting the badly needed supra-agency guidance and direction. The systems needs substantive orientation toward key national intelligence issues with a corresponding reduction in the ability of the various fiefdoms to chart their own courses whether dictated by their views of consumer needs or by what they see as overriding operational considerations. If the NIO can't take on the job of overseeing the entire system, he might form a standing council empowered to investigate and recommend.

The system obviously does not lend itself to finely tuned orchestration, but on the other hand, each of the parts could be better brought into line so they were at least following the same objectives and their respective roles were better defined relative to each other. This is the place to start rather than with a piecemeal centralization or specialization as has been suggested for the analysis function.

There are several ways to increase efficiency in the system as it is now comprised. Some components are wasting effort because of misorientation or because someone else can do the job still better even though the current operation may be doing a splendid job. Elsewhere, duplication or overlapping is failing to yield the benefits of competition because of non-complementary analysis. Desirable duplication in one area or part of the system has been extended into other parts which should not be duplicative. Finally, a component which can do several jobs well may be sub-optimizing by trying to do all of them rather than shifting some of the load to underemployed components.

B. Collection

An integrated collection strategy to support theater force analysis is needed to ensure both the proper orientation as between systems and to establish coordinated requirements. Analysts do not usually approach the writing of requirements as a consciously integrated task. They spend as little time as possible on requirements, taking up the problem system by system at various times when pressed to do so by collection requirements staffs. The analysts' attitudes are primarily an outgrowth of their feelings that, except for satellite photography, the collectors are going to collect what they want to collect and probably never read the requirements. There are two reasons for this. First, a constipated collection network between the user and the collector has acted as an effective barrier to any sense of dialogue between the two. Second, there is no means for measuring whether requirements submitted to collectors actually influence intercept operations, agent instructions, DIA interrogation manuals, [redacted] 25X1 The two outstanding exceptions only serve to emphasize the remoteness of the others from the analysts. The exceptions are satellite photography where mission coverage charts are published and explained and [redacted] 25X1 interrogations of defectors made in response to questions submitted either by cable or in person.

An analyst sees too much extraneous material from collectors to believe that what he the analyst sees as the driving issues are shared as objectives by the collector. There are some reasons for this. [redacted] DIA [redacted] For example, when DDO published 25X1 reports on Soviet airborne operations ahead of others on important aspects of ground operations planned or being debated for use in Western Europe, it was found that one element of the community had put a high priority on the airborne part of the problem, something others feel would be a sideshow even if used.

In addition to integrating requirements as between systems and working to narrow the gap between key questions and actual collection operations, a collection strategy should provide for the dynamics of collection. A breakthrough by one collector may have important implications for redeployment or reorientation by other collectors, and time can be a factor in whether full exploitation of a situation can be made. This seems to be beyond the capabilities of collection systems now, but quick response will be of increasing importance with new technical collection systems.

The current examination and evaluation of the relative value of information being received on the Pact theater forces in East Germany, Poland, and Czechoslovakia ought to go a long way toward sorting out collection of information on the theater forces. Although MBFR analysis was the stimulus, the study has long term application and can be the foundation for an overall collection strategy. It probably ought to be completed before any major changes in collection orientation are made.

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25X1

1. SIGINT

Taking on the NSA problem is like being given command of the western front in 1916 -- what can be tried with the resources at hand that hasn't been tried already and failed?

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content. There would be clear indication that these were single source interpretations offered in contribution to all-source analysis.

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[redacted] 25X1

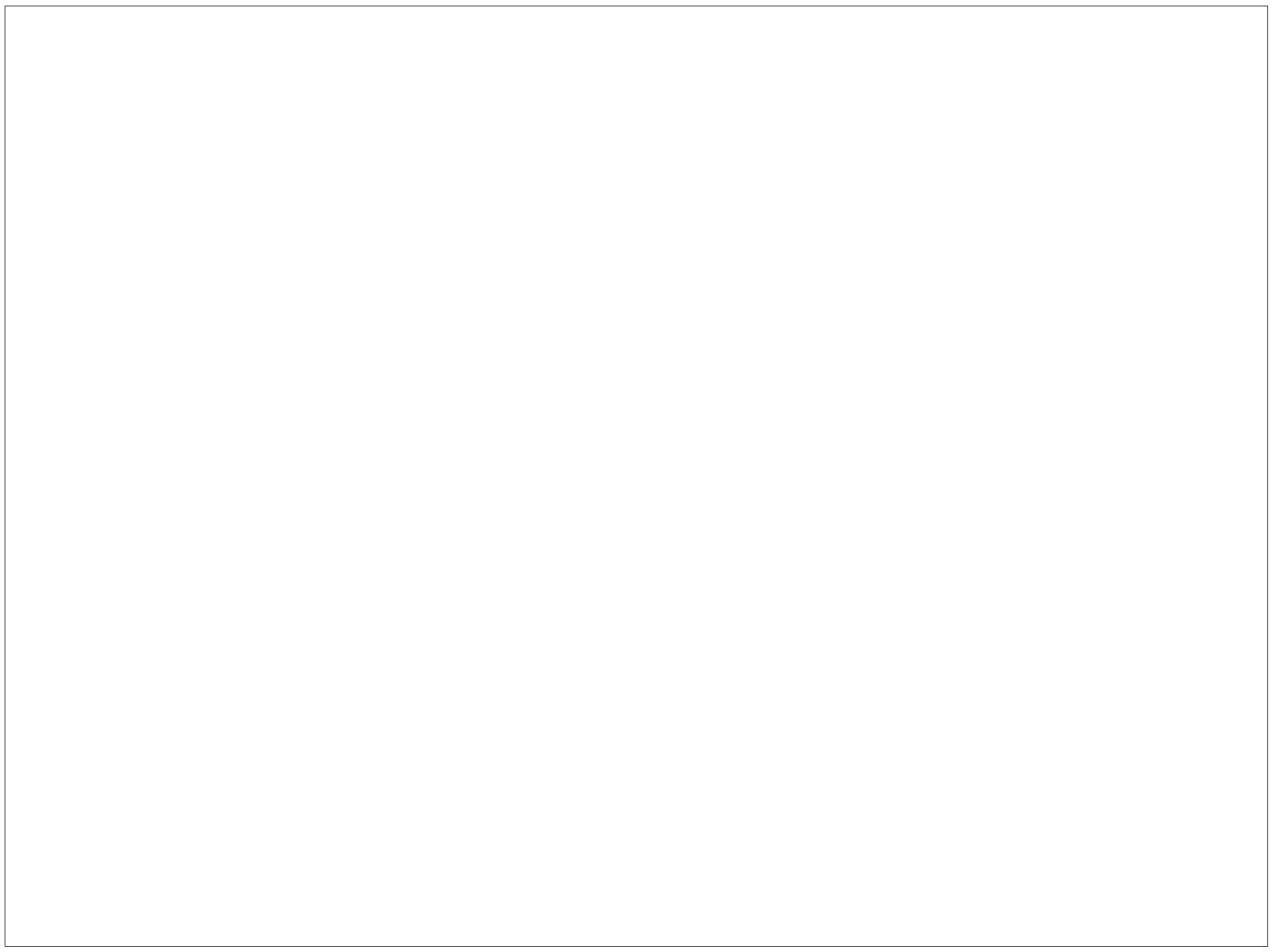
4. Analysis

The first section of this report detailed the analysis function and reviewed some suggestions for reorganization. The advantage of maintaining competition and having available alternate approaches was emphasized. [redacted] that, to-

[redacted] 25X1

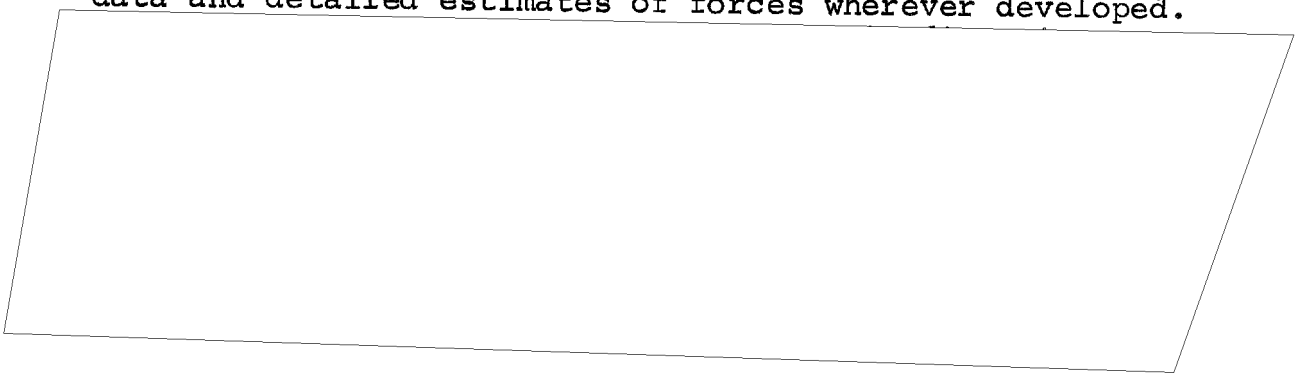
25X1

25X1



While there is merit in developing bean counts or forces data through independent research and analysis, there is also compelling need to make the master machine files "national" by incorporating both basic informational data and detailed estimates of forces wherever developed.

25X1



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[redacted] 25X1

5. Estimating

The changes that have taken place in national estimating with the advent of NSSMs and arms negotiations have been harder to accommodate in the theater forces area than in strategic forces estimating.

[redacted] 25X1

[redacted] 25X1

Thus, not only is there a considerable body of new national intelligence data, but much of it has been developed and fed into NATO channels through an abbreviated working level mechanism while receiving limited dissemination either in the intelligence community or outside it.

[redacted] 25X1

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